same way as constant darkness affected the healthy ones, disregarding light conditions (Fig. 2). These results indicate that in *C. suaveolens* the locomotor activity is synchronized with the light-dark cycle most probably through the eyes. The conclusions should by verified in other Soricids by further experimental morphological studies (Sigmund and Siegmund, in prep.).

The free-running rhythm recorded in non-operated animals under constant conditions could by switched to a 24-hour rhythm shortly after an introduction of the "Zeitgeber" cycle (Fig. 1 – LD'). For a short time there was a conspicuous oscillation in the locomotor activity, connected with re-entrainment of the experimental animals. Control animals always remained synchronized with the LD cycle; daily feeding did not act as a "Zeitgeber" at all.

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Vocal communication in the megachiropteran bat *Rousettus aegyptiacus:* Development of isolation calls during postnatal ontogenesis

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Mutual acoustical communication between mother and infant during parental care is very important for the survival of the juvenile. Isolation calls (i-calls) uttered by the juvenile enable the mother to find the young separated from her. Descriptions of i-calls ("Stimmfühlungslaute" or "Verlassenheitslaute") in megachiropteran bats are given by Gould (1979) for *Eonycteris spelaea*, Kulzer (1958) for *Rousettus aegyptiacus*, Nelson (1964) for *Pteropus poliocephalus*, and Neuweiler (1969) for *Pt. giganteus*. Subsequently it will be shown, how these calls change in the course of ontogenesis in *Rousettus aegyptiacus*.

A juvenile *R. aegyptiacus* was separated from its mother at different ages (see tab.) in order to elicite i-calls. Sounds were recorded while the young was either hand held or hanging on the wall of the cage.

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During the first 30 days after birth the young uttered i-calls immediately after separation from its mother. It produced trains of 2–6 calls (maximally 23) at an intercall intervall of 0.2–0.7 seconds. The i-calls of the young caused searching behavior in the mother. She flew to the young and allowed it to crawl on her body after olfactory examination as it was already described by KULZER (1958). After day 60 the juvenile emitted only a few single calls (see tab.). Trains of calls were observed no longer. At day 81 the young did not utter i-calls any more. This suggests that with increasing age and independence of the young i-calls are needed no longer. They subsequently vanish from the sound repertoire of the young *R. aegyptiacus*. In *Pt. giganteus* the i-call changes to a different call type ("agonistic call") with a new function (NEUWEILER 1969). This could not be observed in *R. aegyptiacus*.

Table

Age and length of forearm of the juvenile and number of calls analysed

Age/ days	Length of forearm/mm	Number of calls
5	39	26
9	44	28
19	52	20
32	60	22
60	70	10
69	75	3
81	77	–

I-calls recorded from *R. aegyptiacus* were very similar to those of other flying foxes (GOULD 1979, NELSON 1964) in respect to their frequency-time-characteristics. They consisted of 1–7 frequency-modulated units with up to 3 harmonics (see fig.), each of which was composed of an upward sweep followed by a downward sweep. At the beginning and end of each call incomplete units with just an upward or downward sweep did occur. 93 % of the calls analysed consisted of 2–5 complete units, mostly 3–5 (64 %). Later (day 32–day 69) there also occurred i-calls with 6–7 units.

I-call duration was mainly between 110–180 ms depending predominantly on the number of units per call. Only at day 5 a few i-calls with a duration of up to 290 ms were

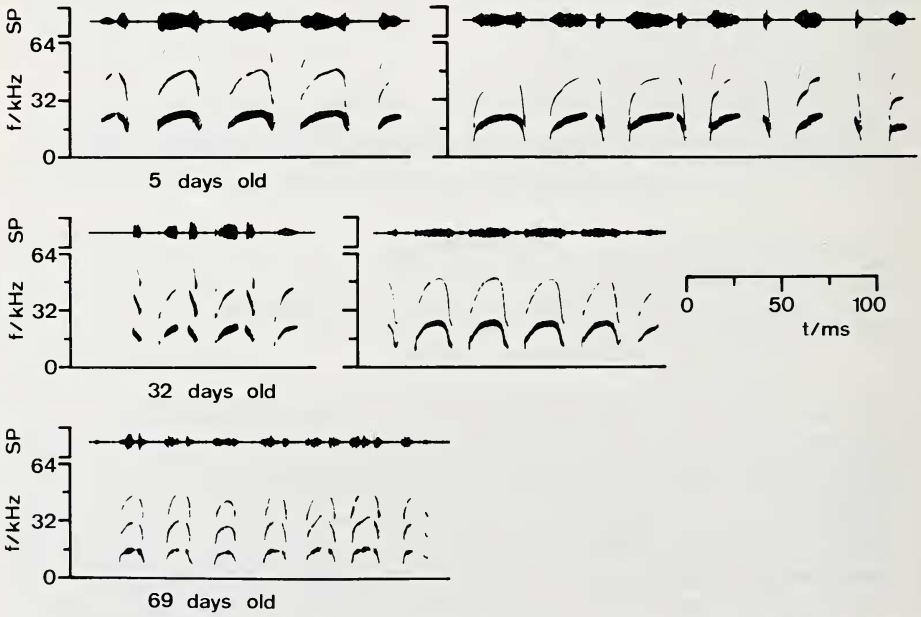

Fig. Oscillograms and spectrograms of i-calls of one juvenile *R. aegyptiacus* at different ages. I-calls consist of a varying number of units. (SP = sound pressure)

recorded. Duration of i-call units decreased with age starting from 20–36 ms at day 5 to 11–14 ms at day 69. This shortening of unit duration leads to an increase of the oscillation of the fundamental. A similar tendency was found by GOULD (1979) in *E. spelaea* and by NELSON (1964) in *Pt. poliocephalus.*

In *R. aegyptiacus* the maximum frequency of the first harmonic of i-calls decreased with age from 21–25 kHz at day 5 to 14–18 kHz at day 69 on the average. A pronounced decrease of frequency within the first three months was also found in *Pt. poliocephalus* (NELSON 1964). In *E. spelaea*, however, the frequencies of i-calls in older juveniles were only "somewhat lower" (GOULD 1979).

In *Pteropus* NELSON (1964) and NEUWEILER (1969) described additional call types of juveniles. The "contact call" is uttered at the moment when the young gets into tactile contact with its mother. The "location call" helps the searching mother to find the roosting place of the young. The calls produced by juvenile *R. aegyptiacus* in these behavioral contexts could not be discriminated from the i-calls which were emitted when the young was separated from the mother.

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BEKANNTMACHUNG

Die Internationale Kommission für Zoologische Nomenklatur teilt mit:

The following Opinions have been published in the Bulletin of Zoological Nomenclature, vol. 40, part 1, on 29 March 1983:

Opinion No

1241 (p. 29) Caenolestidae Trouessart, 1898 and Palaeothentidae Sinclair, 1906 (Mammalia): conserved.

1243 (p. 35) *Erinaceus dauuricus* Sundevall, 1842 (Mammalia, Insectivora): conserved.